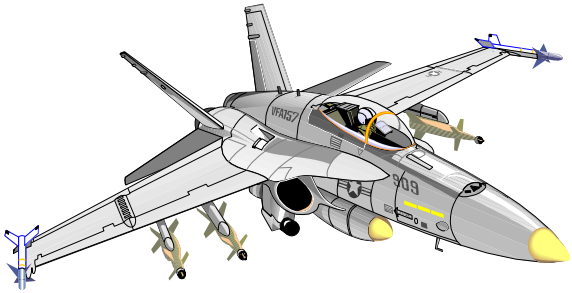
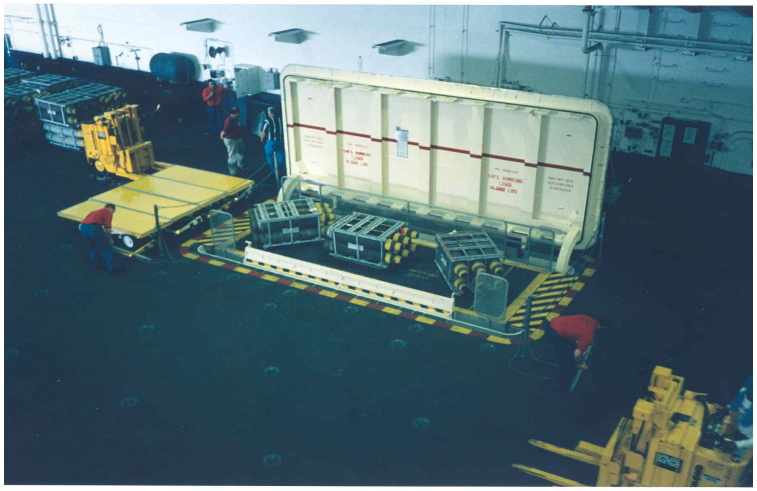


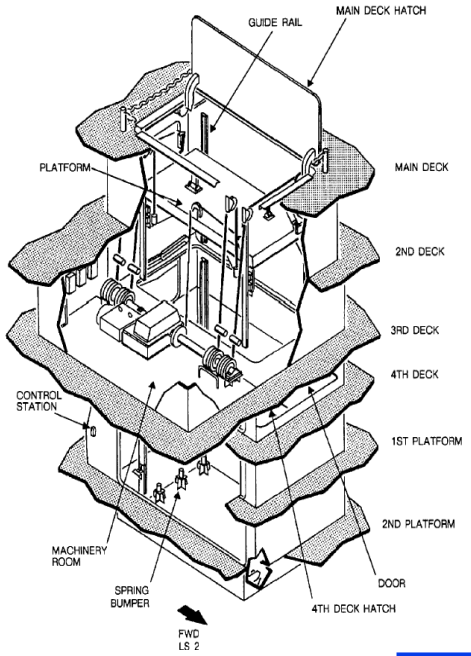
CVN 21 Weapons Brief

CDR Wayne Brovelli, PMS 378

O.J. Robinson, COMNAVAIRFORCE

Legacy Weapons Handling and Stowage





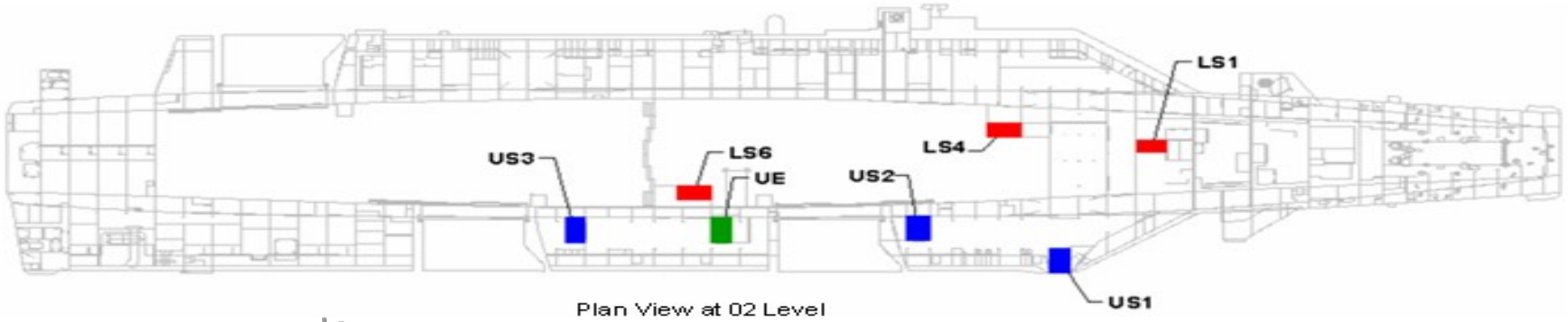
Weapons Handling & Stowage Requirements

- Weapons Handling & Stowage IAW OP-4, Rev 7
- Support ORD mandated Sortie Generation Rates
  - 30 Day Sustained
  - 4 Day Surge
- Support ORD mandated weapons strikedown rates and capacities associated with Heavy UNREP and improved VERTREP capabilities
  - 50 loads/hr/CONREP station (2 stations)
  - 30 loads/hr/helo (2 helos)
  - 6000 LB maximum load capacity

Weapons Handling & Stowage Initiatives

- **Improved Weapons Handling Routes and Elevator Arrangements**
  - dedicated 02 Level weapons handling areas
  - elevators servicing magazine levels to 02 Level
- **Advanced Weapons Elevators (AWE)**
  - ropeless elevator technology
  - allows CVN 21 elevator arrangements without compromising ship survivability
- **Automated Weapons Inventory Management System**

CVN 78 Weapons Handling and Stowage



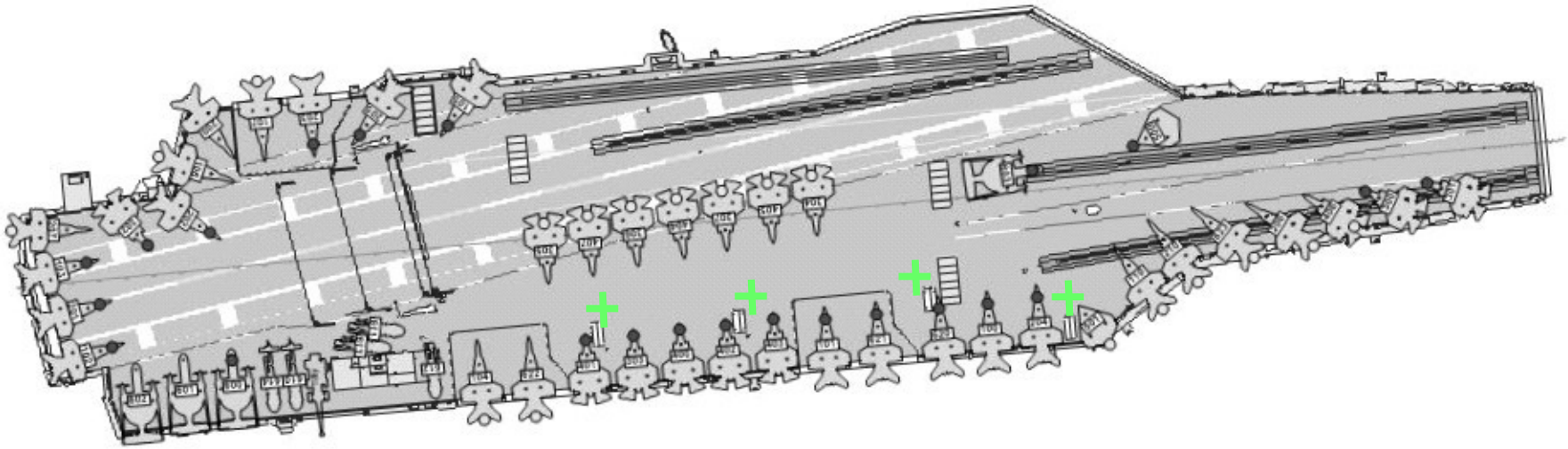
Plan View at 02 Level

STBD Outboard Profile

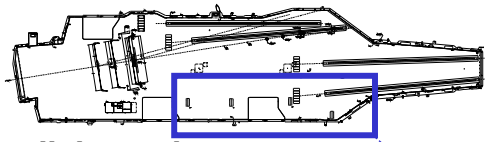
Plan View at Main Deck

Weapons Elevator Locations on CVN 78

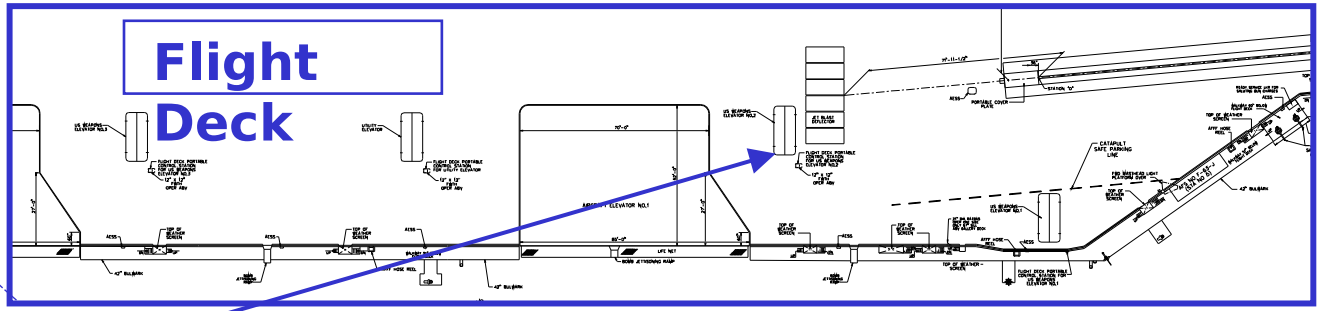
CVN 21 Flight Deck Weapons Elevator Layout



CVN 78 Weapons Handling and Stowage



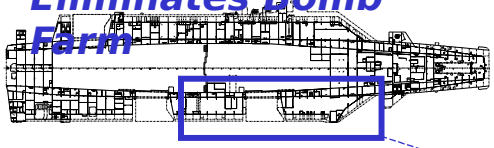
Flight Deck



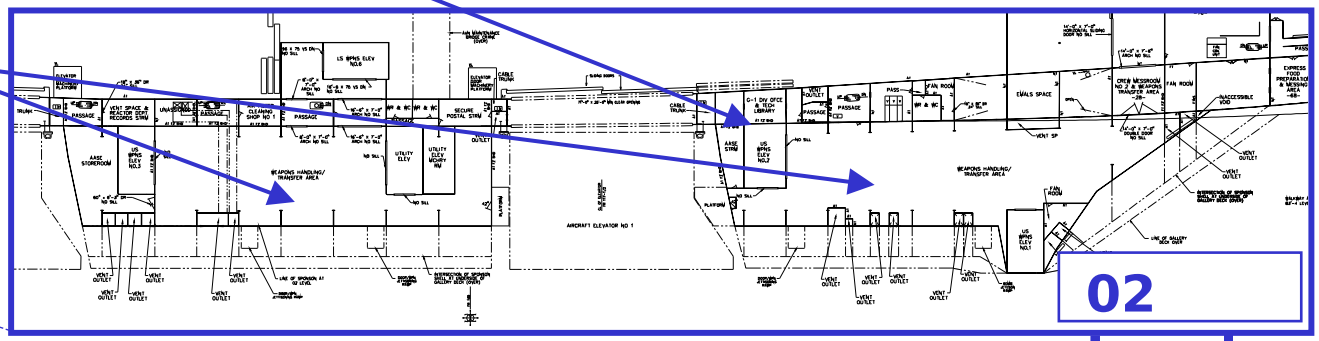
New / Modified Weapons Elevator Configurations

Advanced Weapons Elevator (AWE)

Dedicated Weapons Handling and Transfer Area Eliminates Bomb Farm



02 Level



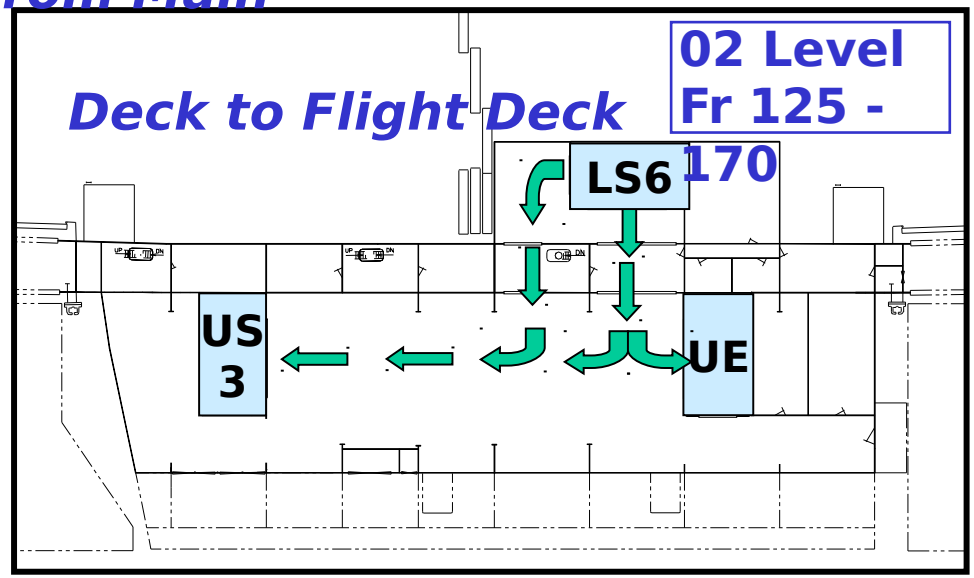
CVN 78 Weapons Handling and Stowage

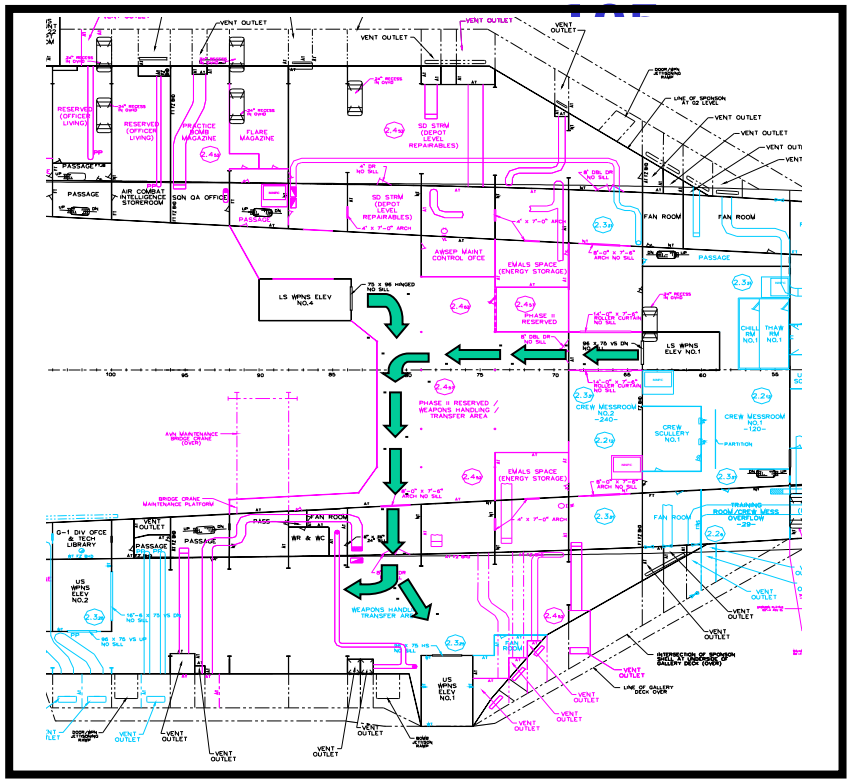
- *3 Lower Stage (LS) Elevators travel from the magazines to 02 Level (remaining 4 LS Elevators terminate at Main Deck)*
- *02 Level handling areas allow for transfer of ready-service weapons from LS to Upper Stage (US) Weapons Elevators*

02 Level Fr 54 -

- *3 US Elevators travel from the 02 Level to Flight Deck*
- *1 Utility Elevator travels from Main Deck to Flight Deck*

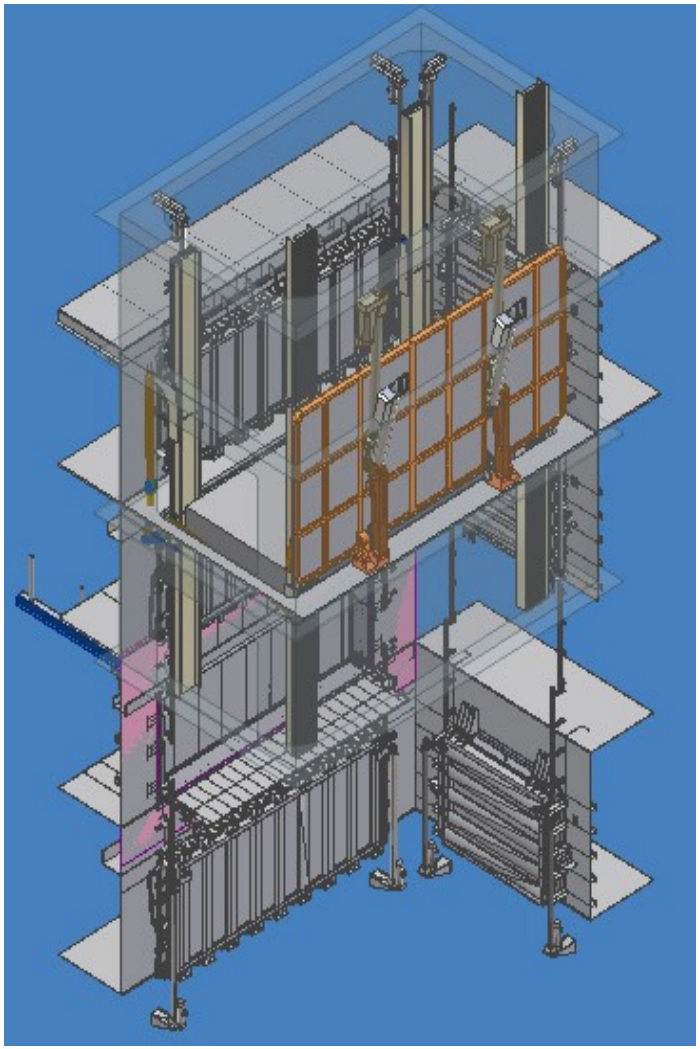
02 Level Fr 125 - 170



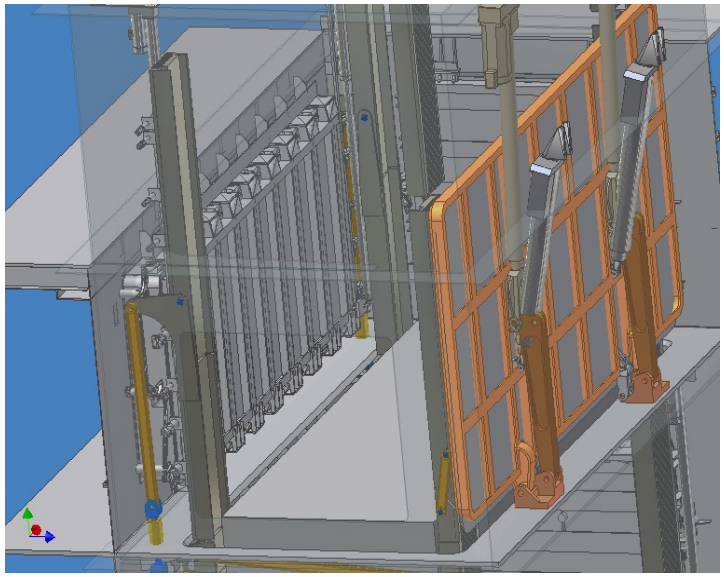


Improved Weapons Flow Paths

CVN 78 Weapons Handling and Stowage



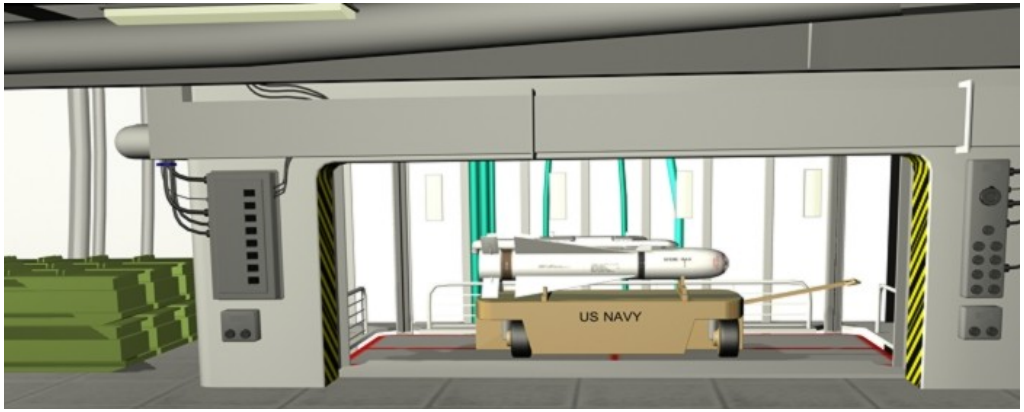
- *Increased Weapons throughput*
- *Higher capacity*
- *Increased survivability*
- *Decreased workload*



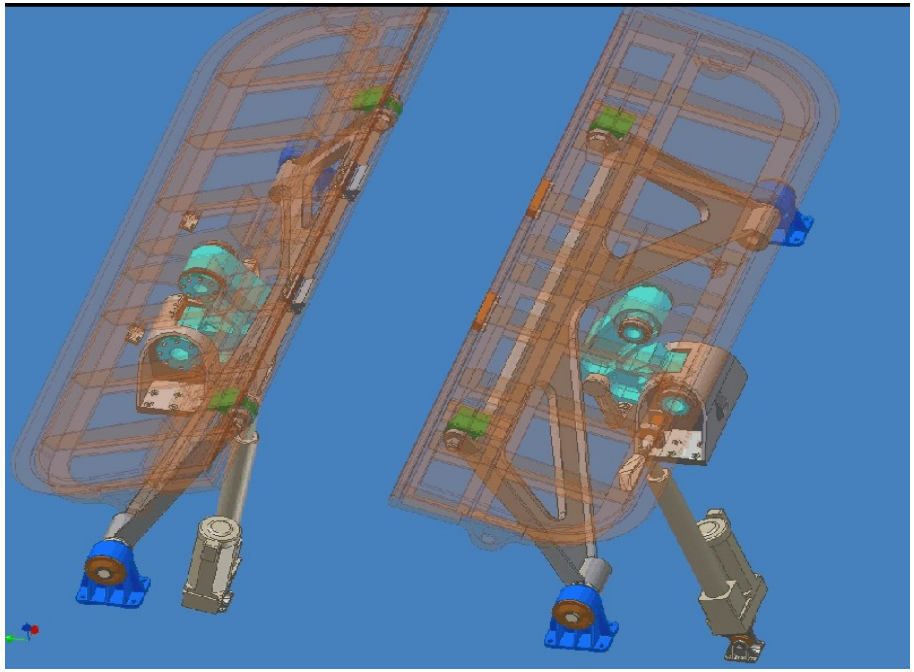
AWE Model

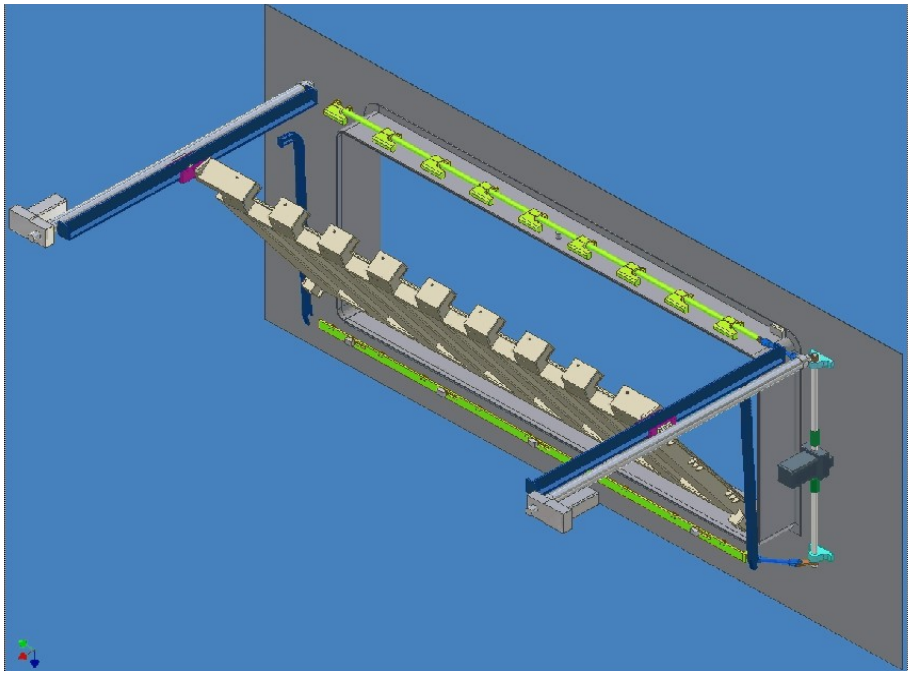
AWE 4th Deck Hatch

CVN 78 Weapons Handling and Stowage



- *Electric Actuators- Eliminates Hydraulics*
- *Elevator Door, Ramps, Dogs*
- *Elevator Hatches*

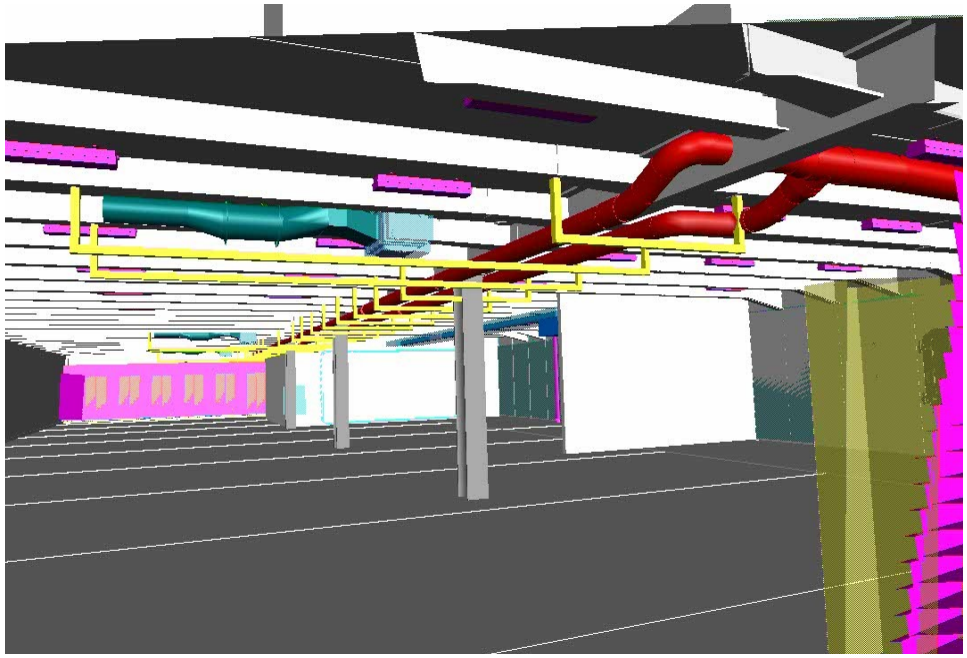




Low Profile Flight Deck Hatch Overhead Door w/ Electric Actuator

CVN 78 Weapons Magazines

- ***Increased Useable Magazine Stowage Volume***
- ***Replaced Gravity Coils with Built-up Fan Coil Units***
- ***Improved Magazine Ventilation***
- ***Reduction in Overhead Top Protective Grid***
- ***Improved Magazine Lighting***
- ***Improved Magazine Fire Fighting System***



Weapons Magazine Model

AWE Basic Performance Requirements Review

- Ropeless Linear Synchronous Motor (LSM) technology
- 24,000 lb payload goal (18,000 lb threshold)
- 8 ft by 19.5 ft platform (except LS1 is 8 ft by 17 ft, US1 is 8 ft by 18 ft)
- Speed of 100 ft per min or better
- Safety features mirror those in MIL-E-17807C